SEQUENCE LISTING

<110>   ANDREEV, et al.

<120>   METHODS FOR IDENTIFYING MODULATORS OF ACTIVE KIT TYROSINE KINASE
        RECEPTOR

<130>   30694/39618A

<150>   US 60/526,930
<151>   2003-12-04

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<170>   PatentIn version 3.2

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cca tct gtg agt cca ggg gaa ccg tct cca cca tcc atc cat cca gga   147
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aaa tca gac tta ata gtc cgc gtg ggc gac gag att agg ctg tta tgc   195
Lys Ser Asp Leu Ile Val Arg Val Gly Asp Glu Ile Arg Leu Leu Cys
            45   50   55

act gat ccg ggc ttt gtc aaa tgg act ttt gag atc ctg gat gaa acg   243
Thr Asp Pro Gly Phe Val Lys Trp Thr Phe Glu Ile Leu Asp Glu Thr
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Asn Glu Asn Lys Gln Asn Glu Trp Ile Thr Glu Lys Ala Glu Ala Thr
75   80   85   90

aac acc ggc aaa tac acg tgc acc aac aaa cac ggc tta agc aat tca   339
Asn Thr Gly Lys Tyr Thr Cys Thr Asn Lys His Gly Leu Ser Asn Ser
                95   100   105

att tat gtg ttt gtt aga gat cct gcc aag ctt ttc ctt gtt gac cgc   387
Ile Tyr Val Phe Val Arg Asp Pro Ala Lys Leu Phe Leu Val Asp Arg
            110   115   120

tcc ttg tat ggg aaa gaa gac aac gac acg ctg gtc cgc tgt cct ctc   435
Ser Leu Tyr Gly Lys Glu Asp Asn Asp Thr Leu Val Arg Cys Pro Leu
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cct ctt ccc aag gac ttg agg ttt att cct gac ccc aag gcg ggc atc    531
Pro Leu Pro Lys Asp Leu Arg Phe Ile Pro Asp Pro Lys Ala Gly Ile
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atg atc aaa agt gtg aaa cgc gcc tac cat cgg ctc tgt ctg cat tgt    579
Met Ile Lys Ser Val Lys Arg Ala Tyr His Arg Leu Cys Leu His Cys
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Lys Val Arg Pro Ala Phe Lys Ala Val Pro Val Val Ser Val Ser Lys
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gca agc tat ctt ctt agg gaa ggg gaa gaa ttc aca gtg acg tgc aca    723
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ata aaa gat gtg tct agt tct gtg tac tca acg tgg aaa aga gaa aac    771
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235                 240                 245                 250

agt cag act aaa cta cag gag aaa tat aat agc tgg cat cac ggt gac    819
Ser Gln Thr Lys Leu Gln Glu Lys Tyr Asn Ser Trp His His Gly Asp
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ttc aat tat gaa cgt cag gca acg ttg act atc agt tca gcg aga gtt    867
Phe Asn Tyr Glu Arg Gln Ala Thr Leu Thr Ile Ser Ser Ala Arg Val
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aat gat tct gga gtg ttc atg tgt tat gcc aat aat act ttt gga tca    915
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gca aat gtc aca aca acc ttg gaa gta gta gat aaa gga ttc att aat    963
Ala Asn Val Thr Thr Thr Leu Glu Val Val Asp Lys Gly Phe Ile Asn
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atc ttc ccc atg ata aac act aca gta ttt gta aac gat gga gaa aat   1011
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gta gat ttg att gtt gaa tat gaa gca ttc ccc aaa cct gaa cac cag   1059
Val Asp Leu Ile Val Glu Tyr Glu Ala Phe Pro Lys Pro Glu His Gln
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cag tgg atc tat atg aac aga acc ttc act gat aaa tgg gaa gat tat   1107
Gln Trp Ile Tyr Met Asn Arg Thr Phe Thr Asp Lys Trp Glu Asp Tyr
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ccc aag tct gag aat gaa agt aat atc aga tac gta agt gaa ctt cat   1155
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caa tgt gtg gca gca gga ttc cca gag ccc aca ata gat tgg tat ttt    1347
Gln Cys Val Ala Ala Gly Phe Pro Glu Pro Thr Ile Asp Trp Tyr Phe
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tgt cca gga act gag cag aga tgc tct gct tct gta ctg cca gtg gat    1395
Cys Pro Gly Thr Glu Gln Arg Cys Ser Ala Ser Val Leu Pro Val Asp
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gtg cag aca cta aac tca tct ggg cca ccg ttt gga aag cta gtg gtt    1443
Val Gln Thr Leu Asn Ser Ser Gly Pro Pro Phe Gly Lys Leu Val Val
460             465             470

cag agt tct ata gat tct agt gca ttc aag cac aat ggc acg gtt gaa    1491
Gln Ser Ser Ile Asp Ser Ser Ala Phe Lys His Asn Gly Thr Val Glu
475             480             485             490

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Cys Lys Ala Tyr Asn Asp Val Gly Lys Thr Ser Ala Tyr Phe Asn Phe
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gca ttt aaa ggt aac aac aaa gag caa atc cat ccc cac acc ctg ttc    1587
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act cct ttg ctg att ggt ttc gta atc gta gct ggc atg atg tgc att    1635
Thr Pro Leu Leu Ile Gly Phe Val Ile Val Ala Gly Met Met Cys Ile
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gta cag tgg aag gtt gtt gag gag ata aat gga aac aat tat gtt tac    1731
Val Gln Trp Lys Val Val Glu Glu Ile Asn Gly Asn Asn Tyr Val Tyr
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ata gac cca aca caa ctt cct tat gat cac aaa tgg gag ttt ccc aga    1779
Ile Asp Pro Thr Gln Leu Pro Tyr Asp His Lys Trp Glu Phe Pro Arg
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aac agg ctg agt ttt ggg aaa acc ctg ggt gct gga gct ttc ggg aag    1827
Asn Arg Leu Ser Phe Gly Lys Thr Leu Gly Ala Gly Ala Phe Gly Lys
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gtt gtt gag gca act gct tat ggc tta att aag tca gat gcg gcc atg    1875
Val Val Glu Ala Thr Ala Tyr Gly Leu Ile Lys Ser Asp Ala Ala Met
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act gtc gct gta aag atg ctc aag ccg agt gcc cat ttg aca gaa cgg    1923
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620             625             630

gaa gcc ctc atg tct gaa ctc aaa gtc ctg agt tac ctt ggt aat cac    1971
Glu Ala Leu Met Ser Glu Leu Lys Val Leu Ser Tyr Leu Gly Asn His
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ctg gtc att aca gaa tat tgt tgc tat ggt gat ctt ttg aat ttt ttg    2067
Leu Val Ile Thr Glu Tyr Cys Cys Tyr Gly Asp Leu Leu Asn Phe Leu
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aga aga aaa cgt gat tca ttt att tgt tca aag cag gaa gat cat gca    2115
Arg Arg Lys Arg Asp Ser Phe Ile Cys Ser Lys Gln Glu Asp His Ala
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gaa gct gca ctt tat aag aat ctt ctg cat tca aag gag tct tcc tgc    2163
Glu Ala Ala Leu Tyr Lys Asn Leu Leu His Ser Lys Glu Ser Ser Cys
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agc gat agt act aat gag tac atg gac atg aaa cct gga gtt tct tat    2211
Ser Asp Ser Thr Asn Glu Tyr Met Asp Met Lys Pro Gly Val Ser Tyr
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Val Val Pro Thr Lys Ala Asp Lys Arg Arg Ser Val Arg Ile Gly Ser
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tac ata gaa aga gat gtg act ccc gcc atc atg gag gat gac gag ttg    2307
Tyr Ile Glu Arg Asp Val Thr Pro Ala Ile Met Glu Asp Asp Glu Leu
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gcc cta gac tta gaa gac ttg ctg agc ttt tct tac cag gtg gca aag    2355
Ala Leu Asp Leu Glu Asp Leu Leu Ser Phe Ser Tyr Gln Val Ala Lys
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ggc atg gct ttc ctc gcc tcc aag aat tgt att cac aga gac ttg gca    2403
Gly Met Ala Phe Leu Ala Ser Lys Asn Cys Ile His Arg Asp Leu Ala
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gcc aga aat atc ctc ctt act cat ggt cgg atc aca aag att tgt gat    2451
Ala Arg Asn Ile Leu Leu Thr His Gly Arg Ile Thr Lys Ile Cys Asp
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ttt ggt cta gcc aga gac atc aag aat gat tct aat tat gtg gtt aaa    2499
Phe Gly Leu Ala Arg Asp Ile Lys Asn Asp Ser Asn Tyr Val Val Lys
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gga aac gct cga cta cct gtg aag tgg atg gca cct gaa agc att ttc    2547
Gly Asn Ala Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ser Ile Phe
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Leu Trp Glu Leu Phe Ser Leu Gly Ser Ser Pro Tyr Pro Gly Met Pro
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Val Asp Ser Lys Phe Tyr Lys Met Ile Lys Glu Gly Phe Arg Met Leu
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agc cct gaa cac gca cct gct gaa atg tat gac ata atg aag act tgc    2739
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Leu Ile Glu Lys Gln Ile Ser Glu Ser Thr Asn His Ile Tyr Ser Asn
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gtg cgg atc aat tct gtc ggc agc acc gct tcc tcc tcc cag cct ctg        2931
Val Arg Ile Asn Ser Val Gly Ser Thr Ala Ser Ser Ser Gln Pro Leu
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Leu Val His Asp Asp Val
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tcacatagct gtctagagta gcttaccaga agcttccata gtggtgcaga ggaagtggaa      4242

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Glu Pro Ser Pro Pro Ser Ile His Pro Gly Lys Ser Asp Leu Ile Val
        35                  40                  45


Arg Val Gly Asp Glu Ile Arg Leu Leu Cys Thr Asp Pro Gly Phe Val
    50                  55                  60


Lys Trp Thr Phe Glu Ile Leu Asp Glu Thr Asn Glu Asn Lys Gln Asn
65                  70                  75                  80


Glu Trp Ile Thr Glu Lys Ala Glu Ala Thr Asn Thr Gly Lys Tyr Thr
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Cys Thr Asn Lys His Gly Leu Ser Asn Ser Ile Tyr Val Phe Val Arg
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Asp Pro Ala Lys Leu Phe Leu Val Asp Arg Ser Leu Tyr Gly Lys Glu
            115                 120                 125

Asp Asn Asp Thr Leu Val Arg Cys Pro Leu Thr Asp Pro Glu Val Thr
    130                 135                 140

Asn Tyr Ser Leu Lys Gly Cys Gln Gly Lys Pro Leu Pro Lys Asp Leu
145                 150                 155                 160

Arg Phe Ile Pro Asp Pro Lys Ala Gly Ile Met Ile Lys Ser Val Lys
                165                 170                 175

Arg Ala Tyr His Arg Leu Cys Leu His Cys Ser Val Asp Gln Glu Gly
            180                 185                 190

Lys Ser Val Leu Ser Glu Lys Phe Ile Leu Lys Val Arg Pro Ala Phe
            195                 200                 205

Lys Ala Val Pro Val Val Ser Val Ser Lys Ala Ser Tyr Leu Leu Arg
    210                 215                 220

Glu Gly Glu Glu Phe Thr Val Thr Cys Thr Ile Lys Asp Val Ser Ser
225                 230                 235                 240

Ser Val Tyr Ser Thr Trp Lys Arg Glu Asn Ser Gln Thr Lys Leu Gln
                245                 250                 255

Glu Lys Tyr Asn Ser Trp His His Gly Asp Phe Asn Tyr Glu Arg Gln
            260                 265                 270

Ala Thr Leu Thr Ile Ser Ser Ala Arg Val Asn Asp Ser Gly Val Phe
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Met Cys Tyr Ala Asn Asn Thr Phe Gly Ser Ala Asn Val Thr Thr Thr
    290                 295                 300

Leu Glu Val Val Asp Lys Gly Phe Ile Asn Ile Phe Pro Met Ile Asn
305                 310                 315                 320

Thr Thr Val Phe Val Asn Asp Gly Glu Asn Val Asp Leu Ile Val Glu
                325                 330                 335

Tyr Glu Ala Phe Pro Lys Pro Glu His Gln Gln Trp Ile Tyr Met Asn
            340                 345                 350
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Arg Thr Phe Thr Asp Lys Trp Glu Asp Tyr Pro Lys Ser Glu Asn Glu
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Ser Asn Ile Arg Tyr Val Ser Glu Leu His Leu Thr Arg Leu Lys Gly
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Thr Glu Gly Gly Thr Tyr Thr Phe Leu Val Ser Asn Ser Asp Val Asn
385   390   395   400

Ala Ala Ile Ala Phe Asn Val Tyr Val Asn Thr Lys Pro Glu Ile Leu
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Thr Tyr Asp Arg Leu Val Asn Gly Met Leu Gln Cys Val Ala Ala Gly
        420   425   430

Phe Pro Glu Pro Thr Ile Asp Trp Tyr Phe Cys Pro Gly Thr Glu Gln
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Arg Cys Ser Ala Ser Val Leu Pro Val Asp Val Gln Thr Leu Asn Ser
    450   455   460

Ser Gly Pro Pro Phe Gly Lys Leu Val Val Gln Ser Ser Ile Asp Ser
465   470   475   480

Ser Ala Phe Lys His Asn Gly Thr Val Glu Cys Lys Ala Tyr Asn Asp
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Val Gly Lys Thr Ser Ala Tyr Phe Asn Phe Ala Phe Lys Gly Asn Asn
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Lys Glu Gln Ile His Pro His Thr Leu Phe Thr Pro Leu Leu Ile Gly
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Phe Val Ile Val Ala Gly Met Met Cys Ile Ile Val Met Ile Leu Thr
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Tyr Lys Tyr Leu Gln Lys Pro Met Tyr Glu Val Gln Trp Lys Val Val
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Glu Glu Ile Asn Gly Asn Asn Tyr Val Tyr Ile Asp Pro Thr Gln Leu
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Pro Tyr Asp His Lys Trp Glu Phe Pro Arg Asn Arg Leu Ser Phe Gly
        580   585   590

Lys Thr Leu Gly Ala Gly Ala Phe Gly Lys Val Val Glu Ala Thr Ala
    595   600   605

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Tyr Gly Leu Ile Lys Ser Asp Ala Ala Met Thr Val Ala Val Lys Met
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Leu Lys Pro Ser Ala His Leu Thr Glu Arg Glu Ala Leu Met Ser Glu
625   630   635   640

Leu Lys Val Leu Ser Tyr Leu Gly Asn His Met Asn Ile Val Asn Leu
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Leu Gly Ala Cys Thr Ile Gly Gly Pro Thr Leu Val Ile Thr Glu Tyr
            660   665   670

Cys Cys Tyr Gly Asp Leu Leu Asn Phe Leu Arg Arg Lys Arg Asp Ser
        675   680   685

Phe Ile Cys Ser Lys Gln Glu Asp His Ala Glu Ala Ala Leu Tyr Lys
    690   695   700

Asn Leu Leu His Ser Lys Glu Ser Ser Cys Ser Asp Ser Thr Asn Glu
705   710   715   720

Tyr Met Asp Met Lys Pro Gly Val Ser Tyr Val Val Pro Thr Lys Ala
            725   730   735

Asp Lys Arg Arg Ser Val Arg Ile Gly Ser Tyr Ile Glu Arg Asp Val
        740   745   750

Thr Pro Ala Ile Met Glu Asp Asp Glu Leu Ala Leu Asp Leu Glu Asp
        755   760   765

Leu Leu Ser Phe Ser Tyr Gln Val Ala Lys Gly Met Ala Phe Leu Ala
    770   775   780

Ser Lys Asn Cys Ile His Arg Asp Leu Ala Ala Arg Asn Ile Leu Leu
785   790   795   800

Thr His Gly Arg Ile Thr Lys Ile Cys Asp Phe Gly Leu Ala Arg Asp
            805   810   815

Ile Lys Asn Asp Ser Asn Tyr Val Val Lys Gly Asn Ala Arg Leu Pro
            820   825   830

Val Lys Trp Met Ala Pro Glu Ser Ile Phe Asn Cys Val Tyr Thr Phe
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Glu Ser Asp Val Trp Ser Tyr Gly Ile Phe Leu Trp Glu Leu Phe Ser
    850   855   860

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Leu Gly Ser Ser Pro Tyr Pro Gly Met Pro Val Asp Ser Lys Phe Tyr
865             870             875             880


Lys Met Ile Lys Glu Gly Phe Arg Met Leu Ser Pro Glu His Ala Pro
                885             890             895


Ala Glu Met Tyr Asp Ile Met Lys Thr Cys Trp Asp Ala Asp Pro Leu
            900             905             910


Lys Arg Pro Thr Phe Lys Gln Ile Val Gln Leu Ile Glu Lys Gln Ile
        915             920             925


Ser Glu Ser Thr Asn His Ile Tyr Ser Asn Leu Ala Asn Cys Ser Pro
    930             935             940


Asn Arg Gln Lys Pro Val Val Asp His Ser Val Arg Ile Asn Ser Val
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Asp Leu Leu Cys Val Leu Leu Val Leu Leu Arg Gly Gln Thr Ala Thr
     10              15              20

tct cag cca tct gca agt cca ggg gag ccg tct ccg cca tcc atc cat      148
Ser Gln Pro Ser Ala Ser Pro Gly Glu Pro Ser Pro Pro Ser Ile His
25              30              35              40

cca gca caa tca gag tta ata gtt gaa gct ggc gac acc ctc agc ctg      196
Pro Ala Gln Ser Glu Leu Ile Val Glu Ala Gly Asp Thr Leu Ser Leu
                45              50              55

acg tgc att gat ccc gac ttt gtc aga tgg act ttc aag acc tat ttc      244
Thr Cys Ile Asp Pro Asp Phe Val Arg Trp Thr Phe Lys Thr Tyr Phe
                60              65              70

aat gaa atg gtt gag aat aaa aaa aat gaa tgg atc cag gaa aaa gcc      292
Asn Glu Met Val Glu Asn Lys Lys Asn Glu Trp Ile Gln Glu Lys Ala
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gag gcc act cgc acg ggc aca tac acg tgc agc aac agc aat ggc ctc          340
Glu Ala Thr Arg Thr Gly Thr Tyr Thr Cys Ser Asn Ser Asn Gly Leu
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acg agt tct att tac gtg ttt gtt aga gat cct gcc aaa ctt ttc ctg          388
Thr Ser Ser Ile Tyr Val Phe Val Arg Asp Pro Ala Lys Leu Phe Leu
105             110                 115                 120

gtt ggc ctt ccc ttg ttt ggc aaa gaa gac agc gac gcg ctg gtc cgc          436
Val Gly Leu Pro Leu Phe Gly Lys Glu Asp Ser Asp Ala Leu Val Arg
            125             130                 135

tgc cct ctg aca gac cca cag gtg tcc aat tat tcc ctc atc gag tgt          484
Cys Pro Leu Thr Asp Pro Gln Val Ser Asn Tyr Ser Leu Ile Glu Cys
            140                 145                 150

gat ggg aaa tct ctc ccc acg gac ctg acg ttt gtc cca aac ccc aag          532
Asp Gly Lys Ser Leu Pro Thr Asp Leu Thr Phe Val Pro Asn Pro Lys
        155                 160                 165

gct ggc atc acc atc aaa aac gtg aag cgc gcc tac cac cgg ctc tgt          580
Ala Gly Ile Thr Ile Lys Asn Val Lys Arg Ala Tyr His Arg Leu Cys
        170                 175                 180

gtc cgc tgt gct gct cag cgt gac ggt aca tgg ctg cat tct gac aaa          628
Val Arg Cys Ala Ala Gln Arg Asp Gly Thr Trp Leu His Ser Asp Lys
185                 190                 195                 200

ttc acc ctc aaa gtg cgg gaa gcc atc aag gct atc cct gtt gtg tct          676
Phe Thr Leu Lys Val Arg Glu Ala Ile Lys Ala Ile Pro Val Val Ser
            205                 210                 215

gtg cct gaa aca agt cac ctc ctt aag aaa ggg gac aca ttt acg gtg          724
Val Pro Glu Thr Ser His Leu Leu Lys Lys Gly Asp Thr Phe Thr Val
        220                 225                 230

gtg tgc acc ata aaa gat gtg tct aca tcc gtg aac tcc atg tgg cta          772
Val Cys Thr Ile Lys Asp Val Ser Thr Ser Val Asn Ser Met Trp Leu
        235                 240                 245

aag atg aac cct cag cct cag cac ata gcc cag gta aag cac aat agc          820
Lys Met Asn Pro Gln Pro Gln His Ile Ala Gln Val Lys His Asn Ser
    250                 255                 260

tgg cac cgg ggt gac ttc aat tat gaa cgc cag gag acg ctg act atc          868
Trp His Arg Gly Asp Phe Asn Tyr Glu Arg Gln Glu Thr Leu Thr Ile
265                 270                 275                 280

agc tcg gca aga gtt gac gat tct gga gtg ttc atg tgt tat gcc aat          916
Ser Ser Ala Arg Val Asp Asp Ser Gly Val Phe Met Cys Tyr Ala Asn
            285                 290                 295

aat act ttt gga tca gca aat gtc aca aca acc ttg aaa gta gta gaa          964
Asn Thr Phe Gly Ser Ala Asn Val Thr Thr Thr Leu Lys Val Val Glu
            300                 305                 310

aaa gga ttc atc aac atc tcc cct gtg aag aac act aca gta ttt gta          1012
Lys Gly Phe Ile Asn Ile Ser Pro Val Lys Asn Thr Thr Val Phe Val
        315                 320                 325

acc gat gga gaa aac gta gat ttg gtt gtt gaa tac gag gcc tac ccc          1060
Thr Asp Gly Glu Asn Val Asp Leu Val Val Glu Tyr Glu Ala Tyr Pro
    330                 335                 340
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aaa ccc gag cac cag cag tgg ata tat atg aac agg acc tcg gct aac      1108
Lys Pro Glu His Gln Gln Trp Ile Tyr Met Asn Arg Thr Ser Ala Asn
345              350              355              360

aaa ggg aag gat tat gtc aaa tct gat aac aaa agc aac atc aga tat      1156
Lys Gly Lys Asp Tyr Val Lys Ser Asp Asn Lys Ser Asn Ile Arg Tyr
              365              370              375

gtg aac caa ctt cgc ctg acc aga tta aaa ggc aca gaa gga ggc act      1204
Val Asn Gln Leu Arg Leu Thr Arg Leu Lys Gly Thr Glu Gly Gly Thr
              380              385              390

tat acc ttt ctg gtg tcc aac tct gat gcc agt gct tcc gtg aca ttc      1252
Tyr Thr Phe Leu Val Ser Asn Ser Asp Ala Ser Ala Ser Val Thr Phe
              395              400              405

aac gtt tac gtg aac aca aaa cca gaa atc ctg acg tac gac agg ctc      1300
Asn Val Tyr Val Asn Thr Lys Pro Glu Ile Leu Thr Tyr Asp Arg Leu
      410              415              420

ata aat ggc atg ctc cag tgt gtg gca gag gga ttc ccg gag ccc aca      1348
Ile Asn Gly Met Leu Gln Cys Val Ala Glu Gly Phe Pro Glu Pro Thr
425              430              435              440

ata gat tgg tat ttt tgt aca gga gca gag caa agg tgt acc act cct      1396
Ile Asp Trp Tyr Phe Cys Thr Gly Ala Glu Gln Arg Cys Thr Thr Pro
              445              450              455

gtc tca cca gtg gac gta cag gtc cag aat gta tct gtg tca cca ttt      1444
Val Ser Pro Val Asp Val Gln Val Gln Asn Val Ser Val Ser Pro Phe
              460              465              470

gga aaa ctg gtg gtt cag agt tcc ata gac tcc agc gtc ttc cgg cac      1492
Gly Lys Leu Val Val Gln Ser Ser Ile Asp Ser Ser Val Phe Arg His
              475              480              485

aac ggc acg gtg gag tgt aag gcc tcc aac gat gtg ggc aag agt tcc      1540
Asn Gly Thr Val Glu Cys Lys Ala Ser Asn Asp Val Gly Lys Ser Ser
      490              495              500

gcc ttc ttt aac ttt gca ttt aaa gag caa atc cag gcc cac act ctg      1588
Ala Phe Phe Asn Phe Ala Phe Lys Glu Gln Ile Gln Ala His Thr Leu
505              510              515              520

ttc acg ccg ctg ctc att ggc ttt gtg gtc gca gct ggc gcg atg ggg      1636
Phe Thr Pro Leu Leu Ile Gly Phe Val Val Ala Ala Gly Ala Met Gly
              525              530              535

atc att gtg atg gtg ctc acc tac aaa tat ttg cag aaa ccc atg tat      1684
Ile Ile Val Met Val Leu Thr Tyr Lys Tyr Leu Gln Lys Pro Met Tyr
              540              545              550

gaa gta caa tgg aag gtt gtc gag gag ata aat gga aac aat tat gtt      1732
Glu Val Gln Trp Lys Val Val Glu Glu Ile Asn Gly Asn Asn Tyr Val
              555              560              565

tac ata gac ccg acg caa ctt cct tat gat cac aaa tgg gag ttt ccc      1780
Tyr Ile Asp Pro Thr Gln Leu Pro Tyr Asp His Lys Trp Glu Phe Pro
              570              575              580

aga aac agg ctg agt ttt gga aag aca ttg gga gct ggt gcc ttc ggg      1828
Arg Asn Arg Leu Ser Phe Gly Lys Thr Leu Gly Ala Gly Ala Phe Gly
585              590              595              600
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aag gtc gtt gag gcc act gca tat ggc ttg att aag tcg gat gct gcc      1876
Lys Val Val Glu Ala Thr Ala Tyr Gly Leu Ile Lys Ser Asp Ala Ala
            605             610             615

atg aca gtt gcc gtg aag atg ctc aaa cca agt gcc cat tta aca gaa      1924
Met Thr Val Ala Val Lys Met Leu Lys Pro Ser Ala His Leu Thr Glu
            620             625             630

aga gag gcc cta atg tcg gaa ctg aag gtc ctg agc tac ctg ggc aat      1972
Arg Glu Ala Leu Met Ser Glu Leu Lys Val Leu Ser Tyr Leu Gly Asn
            635             640             645

cac atg aat att gtg aac ctg ctt ggc gca tgc acg gtg gga ggg ccc      2020
His Met Asn Ile Val Asn Leu Leu Gly Ala Cys Thr Val Gly Gly Pro
            650             655             660

acc ctg gtc att aca gaa tat tgt tgc tat ggt gat ctt ttg aat ttt      2068
Thr Leu Val Ile Thr Glu Tyr Cys Cys Tyr Gly Asp Leu Leu Asn Phe
665             670             675             680

ttg aga agg aag cgt gac tcg ttt att ttc tca aag caa gaa gag cag      2116
Leu Arg Arg Lys Arg Asp Ser Phe Ile Phe Ser Lys Gln Glu Glu Gln
                685             690             695

gca gaa gcg gca ctt tat aag aac ctt ctg cac tca acg gag cct tcc      2164
Ala Glu Ala Ala Leu Tyr Lys Asn Leu Leu His Ser Thr Glu Pro Ser
            700             705             710

tgt gac agt tca aat gaa tat atg gac atg aag cct ggc gtt tcc tac      2212
Cys Asp Ser Ser Asn Glu Tyr Met Asp Met Lys Pro Gly Val Ser Tyr
            715             720             725

gtg gtg cca acc aag aca gac aag agg aga tcc gca aga ata gac tcg      2260
Val Val Pro Thr Lys Thr Asp Lys Arg Arg Ser Ala Arg Ile Asp Ser
            730             735             740

tac ata gaa aga gac gtg act cct gcc atc atg gaa gat gac gag ctg      2308
Tyr Ile Glu Arg Asp Val Thr Pro Ala Ile Met Glu Asp Asp Glu Leu
745             750             755             760

gct ctg gac ctg gat gat ttg ctg agc ttc tcc tac cag gtg gcc aag      2356
Ala Leu Asp Leu Asp Asp Leu Leu Ser Phe Ser Tyr Gln Val Ala Lys
            765             770             775

gcg atg gcg ttc ctc gcc tcc aag aat tgt att cac aga gat ttg gca      2404
Ala Met Ala Phe Leu Ala Ser Lys Asn Cys Ile His Arg Asp Leu Ala
            780             785             790

gcc agg aat atc ctc ctc act cac ggg cgg atc aca aag att tgc gat      2452
Ala Arg Asn Ile Leu Leu Thr His Gly Arg Ile Thr Lys Ile Cys Asp
            795             800             805

ttc ggg cta gcc aga gac atc agg aat gat tcg aat tac gtg gtc aaa      2500
Phe Gly Leu Ala Arg Asp Ile Arg Asn Asp Ser Asn Tyr Val Val Lys
            810             815             820

gga aat gca cga ctg ccc gtg aag tgg atg gca cca gag agc att ttc      2548
Gly Asn Ala Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ser Ile Phe
825             830             835             840

agc tgc gtg tac aca ttt gaa agt gat gtc tgg tcc tat ggg att ttc      2596
Ser Cys Val Tyr Thr Phe Glu Ser Asp Val Trp Ser Tyr Gly Ile Phe
            845             850             855
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ctc tgg gag ctc ttc tcc tta gga agc agc ccc tac cca ggg atg ccg      2644
Leu Trp Glu Leu Phe Ser Leu Gly Ser Ser Pro Tyr Pro Gly Met Pro
        860                 865                 870

gtc gac tcc aag ttc tac aag atg atc aag gaa ggc ttc cgg atg gtc      2692
Val Asp Ser Lys Phe Tyr Lys Met Ile Lys Glu Gly Phe Arg Met Val
        875                 880                 885

agc ccg gag cac gcg cct gcc gaa atg tat gac gtc atg aag act tgc      2740
Ser Pro Glu His Ala Pro Ala Glu Met Tyr Asp Val Met Lys Thr Cys
        890                 895                 900

tgg gac gct gac ccc ttg aaa agg cca aca ttc aag cag gtt gtc caa      2788
Trp Asp Ala Asp Pro Leu Lys Arg Pro Thr Phe Lys Gln Val Val Gln
905                 910                 915                 920

ctt att gag aag cag atc tcg gac agc acc aag cac att tac tcc aac      2836
Leu Ile Glu Lys Gln Ile Ser Asp Ser Thr Lys His Ile Tyr Ser Asn
                925                 930                 935

ttg gca aac tgc aac ccc aac cca gag aac ccc gtg gtg gtg gac cat      2884
Leu Ala Asn Cys Asn Pro Asn Pro Glu Asn Pro Val Val Val Asp His
                940                 945                 950

tcc gtg agg gtc aac tcg gtg ggc agc agc gcc tct tct acg cag ccc      2932
Ser Val Arg Val Asn Ser Val Gly Ser Ser Ala Ser Ser Thr Gln Pro
        955                 960                 965

ctg ctc gtg cac gaa gat gcc tga gcagaaaccc aagtccaaca ggctttgctg    2986
Leu Leu Val His Glu Asp Ala
        970                 975

ctgtctccga ccccgtcctt ctggcttctg tgatggttac ttggtttccc tttgacttgc    3046

atcctattcc agggtagcga gttccccacc ccacctccaa ccccactgtg attccgcctt    3106

tacgagcaca cactttagtg gccgatggct tttctttttct gccatcagcc accgtcccgc   3166

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cagaaggact cctcctgctt tagaggagaa gggaagggcg gggtgaaact ggatgcccag    3286

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agaatagatg tagtcccatt tggccctgag agccatcctt aatgatggga gatatatgta    3406

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acggggcatc ggaagtctgg tcacgctaag aagaccgagg ctgagaagga caagccagg     3526

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agcctttgta tatactcatc tatacgttgt atgcgttcat actttggagg agggatttcc    3706

cacaagcttt cgtttctgtg tacagccctg gattagacct actgtgtgta agaatagatt    3766

aagagccata catatttgaa ggaaacagtt aaatgttttt tggttgtggt tgttgttgtt    3826

gttgttttaa agaaaaaaat gtatatgcta agcacaatct ttataagacc tcttagccaa    3886

catacttgct ctgtctacac ttcggaacaa gccttccatg tcagagtggc tttgcaggca    3946
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gtccctgaaa atattttttta tatatacagt aactttatgt gtaaataata cgctgtgcaa    5026

gtttaaacat gtcacgttac atgtgggttt tttctgatat gttgtccaac tgttgacagt    5086

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Glu Pro Ser Pro Pro Ser Ile His Pro Ala Gln Ser Glu Leu Ile Val
            35   40   45

Glu Ala Gly Asp Thr Leu Ser Leu Thr Cys Ile Asp Pro Asp Phe Val
    50   55   60

Arg Trp Thr Phe Lys Thr Tyr Phe Asn Glu Met Val Glu Asn Lys Lys
65   70   75   80

Asn Glu Trp Ile Gln Glu Lys Ala Glu Ala Thr Arg Thr Gly Thr Tyr
            85   90   95

Thr Cys Ser Asn Ser Asn Gly Leu Thr Ser Ser Ile Tyr Val Phe Val
            100   105   110

Arg Asp Pro Ala Lys Leu Phe Leu Val Gly Leu Pro Leu Phe Gly Lys
        115   120   125

Glu Asp Ser Asp Ala Leu Val Arg Cys Pro Leu Thr Asp Pro Gln Val
    130   135   140

Ser Asn Tyr Ser Leu Ile Glu Cys Asp Gly Lys Ser Leu Pro Thr Asp
145   150   155   160

Leu Thr Phe Val Pro Asn Pro Lys Ala Gly Ile Thr Ile Lys Asn Val
            165   170   175

Lys Arg Ala Tyr His Arg Leu Cys Val Arg Cys Ala Ala Gln Arg Asp
            180   185   190

Gly Thr Trp Leu His Ser Asp Lys Phe Thr Leu Lys Val Arg Glu Ala
        195   200   205

Ile Lys Ala Ile Pro Val Val Ser Val Pro Glu Thr Ser His Leu Leu
    210   215   220

Lys Lys Gly Asp Thr Phe Thr Val Val Cys Thr Ile Lys Asp Val Ser
225   230   235   240

Thr Ser Val Asn Ser Met Trp Leu Lys Met Asn Pro Gln Pro Gln His
            245   250   255

Ile Ala Gln Val Lys His Asn Ser Trp His Arg Gly Asp Phe Asn Tyr
            260   265   270

Glu Arg Gln Glu Thr Leu Thr Ile Ser Ser Ala Arg Val Asp Asp Ser
        275   280   285

Gly Val Phe Met Cys Tyr Ala Asn Asn Thr Phe Gly Ser Ala Asn Val
    290   295   300

Thr Thr Thr Leu Lys Val Val Glu Lys Gly Phe Ile Asn Ile Ser Pro
305   310   315   320

Val Lys Asn Thr Thr Val Phe Val Thr Asp Gly Glu Asn Val Asp Leu
            325   330   335

Val Val Glu Tyr Glu Ala Tyr Pro Lys Pro Glu His Gln Gln Trp Ile
            340   345   350

Tyr Met Asn Arg Thr Ser Ala Asn Lys Gly Lys Asp Tyr Val Lys Ser
            355   360   365

Asp Asn Lys Ser Asn Ile Arg Tyr Val Asn Gln Leu Arg Leu Thr Arg
    370   375   380

Leu Lys Gly Thr Glu Gly Gly Thr Tyr Thr Phe Leu Val Ser Asn Ser
385   390   395   400

Asp Ala Ser Ala Ser Val Thr Phe Asn Val Tyr Val Asn Thr Lys Pro
            405   410   415

Glu Ile Leu Thr Tyr Asp Arg Leu Ile Asn Gly Met Leu Gln Cys Val
            420   425   430

Ala Glu Gly Phe Pro Glu Pro Thr Ile Asp Trp Tyr Phe Cys Thr Gly
            435   440   445

Ala Glu Gln Arg Cys Thr Thr Pro Val Ser Pro Val Asp Val Gln Val
    450   455   460

Gln Asn Val Ser Val Ser Pro Phe Gly Lys Leu Val Val Gln Ser Ser
465   470   475   480

Ile Asp Ser Ser Val Phe Arg His Asn Gly Thr Val Glu Cys Lys Ala
            485   490   495

Ser Asn Asp Val Gly Lys Ser Ser Ala Phe Phe Asn Phe Ala Phe Lys
            500   505   510

Glu Gln Ile Gln Ala His Thr Leu Phe Thr Pro Leu Leu Ile Gly Phe
            515   520   525

Val Val Ala Ala Gly Ala Met Gly Ile Ile Val Met Val Leu Thr Tyr
    530   535   540

Lys Tyr Leu Gln Lys Pro Met Tyr Glu Val Gln Trp Lys Val Val Glu
545   550   555   560

Glu Ile Asn Gly Asn Asn Tyr Val Tyr Ile Asp Pro Thr Gln Leu Pro
              565   570   575

Tyr Asp His Lys Trp Glu Phe Pro Arg Asn Arg Leu Ser Phe Gly Lys
          580   585   590

Thr Leu Gly Ala Gly Ala Phe Gly Lys Val Val Glu Ala Thr Ala Tyr
          595   600   605

Gly Leu Ile Lys Ser Asp Ala Ala Met Thr Val Ala Val Lys Met Leu
      610   615   620

Lys Pro Ser Ala His Leu Thr Glu Arg Glu Ala Leu Met Ser Glu Leu
625   630   635   640

Lys Val Leu Ser Tyr Leu Gly Asn His Met Asn Ile Val Asn Leu Leu
              645   650   655

Gly Ala Cys Thr Val Gly Gly Pro Thr Leu Val Ile Thr Glu Tyr Cys
          660   665   670

Cys Tyr Gly Asp Leu Leu Asn Phe Leu Arg Arg Lys Arg Asp Ser Phe
          675   680   685

Ile Phe Ser Lys Gln Glu Glu Gln Ala Glu Ala Ala Leu Tyr Lys Asn
      690   695   700

Leu Leu His Ser Thr Glu Pro Ser Cys Asp Ser Ser Asn Glu Tyr Met
705   710   715   720

Asp Met Lys Pro Gly Val Ser Tyr Val Val Pro Thr Lys Thr Asp Lys
          725   730   735

Arg Arg Ser Ala Arg Ile Asp Ser Tyr Ile Glu Arg Asp Val Thr Pro
          740   745   750

Ala Ile Met Glu Asp Asp Glu Leu Ala Leu Asp Leu Asp Asp Leu Leu
          755   760   765

Ser Phe Ser Tyr Gln Val Ala Lys Ala Met Ala Phe Leu Ala Ser Lys
      770   775   780

Asn Cys Ile His Arg Asp Leu Ala Ala Arg Asn Ile Leu Leu Thr His
785   790   795   800

Gly Arg Ile Thr Lys Ile Cys Asp Phe Gly Leu Ala Arg Asp Ile Arg
          805   810   815

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Asn Asp Ser Asn Tyr Val Val Lys Gly Asn Ala Arg Leu Pro Val Lys
        820             825                 830

Trp Met Ala Pro Glu Ser Ile Phe Ser Cys Val Tyr Thr Phe Glu Ser
        835             840                 845

Asp Val Trp Ser Tyr Gly Ile Phe Leu Trp Glu Leu Phe Ser Leu Gly
    850             855                 860

Ser Ser Pro Tyr Pro Gly Met Pro Val Asp Ser Lys Phe Tyr Lys Met
865             870                 875                 880

Ile Lys Glu Gly Phe Arg Met Val Ser Pro Glu His Ala Pro Ala Glu
            885                 890                 895

Met Tyr Asp Val Met Lys Thr Cys Trp Asp Ala Asp Pro Leu Lys Arg
        900             905                 910

Pro Thr Phe Lys Gln Val Val Gln Leu Ile Glu Lys Gln Ile Ser Asp
        915             920                 925

Ser Thr Lys His Ile Tyr Ser Asn Leu Ala Asn Cys Asn Pro Asn Pro
    930             935                 940

Glu Asn Pro Val Val Val Asp His Ser Val Arg Val Asn Ser Val Gly
945             950                 955                 960

Ser Ser Ala Ser Ser Thr Gln Pro Leu Leu Val His Glu Asp Ala
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Arg Gly Ala Trp Asp Leu Leu Cys Val Leu Leu Val Leu Leu Arg Gly
5                10                 15                  20

cag aca ggg act tct cag cca tct gcg agt cca ggg gag ccg tct cca       152
Gln Thr Gly Thr Ser Gln Pro Ser Ala Ser Pro Gly Glu Pro Ser Pro
            25                  30                  35
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cca tcc atc cag ccg gcc cag tca gag tta ata gtt gaa gcc ggg gac       200
Pro Ser Ile Gln Pro Ala Gln Ser Glu Leu Ile Val Glu Ala Gly Asp
            40              45                  50

acc atc agg ctg acg tgc act gac ccc gcc ttt gtc aaa tgg act ttc       248
Thr Ile Arg Leu Thr Cys Thr Asp Pro Ala Phe Val Lys Trp Thr Phe
            55              60                  65

gag atc ctc gat gta agg att gag aat aag cag agc gaa tgg att cga       296
Glu Ile Leu Asp Val Arg Ile Glu Asn Lys Gln Ser Glu Trp Ile Arg
            70              75                  80

gaa aaa gcc gag gcc act cac acg ggc aaa tac acg tgc gtc agc ggc       344
Glu Lys Ala Glu Ala Thr His Thr Gly Lys Tyr Thr Cys Val Ser Gly
85              90                  95                  100

agc ggc ctc agg agc tct att tac gtg ttc gtt aga gat cct gcc gta       392
Ser Gly Leu Arg Ser Ser Ile Tyr Val Phe Val Arg Asp Pro Ala Val
            105             110                 115

ctt ttc ctg gtt ggc ctt ccc ttg ttt ggc aaa gaa gac aac gac gca       440
Leu Phe Leu Val Gly Leu Pro Leu Phe Gly Lys Glu Asp Asn Asp Ala
            120             125             130

ctg gtc cgc tgc ccc ctg aca gac cca cag gtg tcc aat tac tcc ctc       488
Leu Val Arg Cys Pro Leu Thr Asp Pro Gln Val Ser Asn Tyr Ser Leu
            135             140             145

att gag tgt gat ggg aaa tct ctc ccc acg gac ctg aag ttc gtc ccc       536
Ile Glu Cys Asp Gly Lys Ser Leu Pro Thr Asp Leu Lys Phe Val Pro
            150             155             160

aac ccc aag gct ggc atc acc atc aaa aac gtg aag cgc gcc tac cac       584
Asn Pro Lys Ala Gly Ile Thr Ile Lys Asn Val Lys Arg Ala Tyr His
165             170             175             180

cgg ctg tgc atc cgg tgt gct gcc cag cgt gag ggc aaa tgg atg cgg       632
Arg Leu Cys Ile Arg Cys Ala Ala Gln Arg Glu Gly Lys Trp Met Arg
            185             190                 195

tct gac aaa ttc acc ctc aaa gtg aga gca gcc atc aaa gct atc cca       680
Ser Asp Lys Phe Thr Leu Lys Val Arg Ala Ala Ile Lys Ala Ile Pro
            200             205                 210

gtg gtg tct gtg ccc gaa aca agt cat ctc ctt aag gaa ggg gac aca       728
Val Val Ser Val Pro Glu Thr Ser His Leu Leu Lys Glu Gly Asp Thr
            215             220                 225

ttt acg gtg ata tgc acc ata aaa gac gtg tct aca tcc gtg gac tcc       776
Phe Thr Val Ile Cys Thr Ile Lys Asp Val Ser Thr Ser Val Asp Ser
            230             235             240

atg tgg ata aag ttg aac cct cag cct cag agc aaa gcc cag gta aag       824
Met Trp Ile Lys Leu Asn Pro Gln Pro Gln Ser Lys Ala Gln Val Lys
245             250             255             260

cgc aat agc tgg cat cag ggc gac ttc aat tac gaa cgc cag gag acg       872
Arg Asn Ser Trp His Gln Gly Asp Phe Asn Tyr Glu Arg Gln Glu Thr
            265             270                 275

ctg act atc agc tca gca aga gtt aac gat tcc gga gtg ttc atg tgt       920
Leu Thr Ile Ser Ser Ala Arg Val Asn Asp Ser Gly Val Phe Met Cys
            280             285                 290
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tat gcc aat aat act ttt gga tca gca aat gtc aca aca acc ttg aaa          968
Tyr Ala Asn Asn Thr Phe Gly Ser Ala Asn Val Thr Thr Thr Leu Lys
        295                     300                 305


gta gta gaa aag gga ttc atc aac atc ttc cct gtg aag aac act acg          1016
Val Val Glu Lys Gly Phe Ile Asn Ile Phe Pro Val Lys Asn Thr Thr
    310                     315                 320


gta ttt gta act gat ggg gaa aat gta gac ttg gtt gtt gag ttc gag          1064
Val Phe Val Thr Asp Gly Glu Asn Val Asp Leu Val Val Glu Phe Glu
325                     330                 335                 340


gcc tac cct aaa cct gaa cac cag cag tgg atc tac atg aac agg acg          1112
Ala Tyr Pro Lys Pro Glu His Gln Gln Trp Ile Tyr Met Asn Arg Thr
                345                 350                 355


cct act aac aga ggg gag gat tat gtc aaa tcc gac aac caa agc aac          1160
Pro Thr Asn Arg Gly Glu Asp Tyr Val Lys Ser Asp Asn Gln Ser Asn
            360                 365                 370


atc aga tat gtg aac gaa ctt cgc ctg acc aga ttg aaa ggc aca gaa          1208
Ile Arg Tyr Val Asn Glu Leu Arg Leu Thr Arg Leu Lys Gly Thr Glu
        375                 380                 385


gga ggc act tac acc ttt ctg gtg tcc aac tct gat gtc agt gct tcc          1256
Gly Gly Thr Tyr Thr Phe Leu Val Ser Asn Ser Asp Val Ser Ala Ser
    390                 395                 400


gtg aca ttt gat gtt tat gtg aac aca aaa cca gaa atc ctg aca tat          1304
Val Thr Phe Asp Val Tyr Val Asn Thr Lys Pro Glu Ile Leu Thr Tyr
405                 410                 415                 420


gac agg ctc atg aat ggc agg ctc cag tgt gtg gcg gcg gga ttc ccg          1352
Asp Arg Leu Met Asn Gly Arg Leu Gln Cys Val Ala Ala Gly Phe Pro
                425                 430                 435


gag ccc aca ata gat tgg tat ttt tgt aca ggg gca gag caa agg tgt          1400
Glu Pro Thr Ile Asp Trp Tyr Phe Cys Thr Gly Ala Glu Gln Arg Cys
            440                 445                 450


acc gtt cct gtc ccg cca gta gac gta cag atc cag aat gcg tct gtg          1448
Thr Val Pro Val Pro Pro Val Asp Val Gln Ile Gln Asn Ala Ser Val
        455                 460                 465


tca cca ttt gga aaa ctg gtg gtt cag agt tcc ata gac tcc agc gtc          1496
Ser Pro Phe Gly Lys Leu Val Val Gln Ser Ser Ile Asp Ser Ser Val
    470                 475                 480


ttc cgg cac aac ggc acg gtg gag tgt aag gcc tcc aac gct gtg ggc          1544
Phe Arg His Asn Gly Thr Val Glu Cys Lys Ala Ser Asn Ala Val Gly
485                 490                 495                 500


aag agc tct gcc ttc ttt aac ttt gca ttt aaa ggt aac agc aaa gag          1592
Lys Ser Ser Ala Phe Phe Asn Phe Ala Phe Lys Gly Asn Ser Lys Glu
                505                 510                 515


caa atc cag ccc cac acc ctg ttc acg ccg ctg ctc att ggc ttc gtg          1640
Gln Ile Gln Pro His Thr Leu Phe Thr Pro Leu Leu Ile Gly Phe Val
            520                 525                 530


gtc aca gcc ggc ttg atg ggg atc att gtg atg gtt ctt gcc tac aaa          1688
Val Thr Ala Gly Leu Met Gly Ile Ile Val Met Val Leu Ala Tyr Lys
        535                 540                 545
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tat ttg cag aaa ccc atg tat gaa gta caa tgg aag gtt gtc gag gag    1736
Tyr Leu Gln Lys Pro Met Tyr Glu Val Gln Trp Lys Val Val Glu Glu
    550             555                 560

ata aat ggg aac aat tat gtt tac ata gac cca acg cag ctt cct tat    1784
Ile Asn Gly Asn Asn Tyr Val Tyr Ile Asp Pro Thr Gln Leu Pro Tyr
565             570                 575                 580

gac cac aaa tgg gag ttt ccc aga aac agg ctg agt ttt gga aag acc    1832
Asp His Lys Trp Glu Phe Pro Arg Asn Arg Leu Ser Phe Gly Lys Thr
            585                 590                 595

ttg gga gct ggt gcc ttt ggg aag gta gtt gag gcc act gcc tat ggc    1880
Leu Gly Ala Gly Ala Phe Gly Lys Val Val Glu Ala Thr Ala Tyr Gly
                600                 605                 610

tta att aag tcg gat gcc gcc atg acg gtt gcc gtg aag atg ctc aaa    1928
Leu Ile Lys Ser Asp Ala Ala Met Thr Val Ala Val Lys Met Leu Lys
            615                 620                 625

cca agt gcc cat tta acg gaa agg gag gcc cta atg tca gaa ctg aag    1976
Pro Ser Ala His Leu Thr Glu Arg Glu Ala Leu Met Ser Glu Leu Lys
        630                 635                 640

gtc ctg agc tac ctg ggt aat cac atg aat atc gtc aac ctc ctt gga    2024
Val Leu Ser Tyr Leu Gly Asn His Met Asn Ile Val Asn Leu Leu Gly
645                 650                 655                 660

gcg tgt acc gtg gga ggg ccc acc ctg gtc att aca gaa tac tgt tgc    2072
Ala Cys Thr Val Gly Gly Pro Thr Leu Val Ile Thr Glu Tyr Cys Cys
                665                 670                 675

tat ggt gat ctt ttg aat ttc ttg aga aga aag cgt gac tcg ttt att    2120
Tyr Gly Asp Leu Leu Asn Phe Leu Arg Arg Lys Arg Asp Ser Phe Ile
            680                 685                 690

ttc tca aag caa gaa gaa cag gca gac gcc gca ctt tat aag aac ctt    2168
Phe Ser Lys Gln Glu Glu Gln Ala Asp Ala Ala Leu Tyr Lys Asn Leu
            695                 700                 705

ctg cat tca aag gag tct tcc tgt gac agc tca aac gag tac atg gac    2216
Leu His Ser Lys Glu Ser Ser Cys Asp Ser Ser Asn Glu Tyr Met Asp
    710                 715                 720

atg aag cct ggc gtt tcc tac gtc gta cca acc aag aca gac aaa agg    2264
Met Lys Pro Gly Val Ser Tyr Val Val Pro Thr Lys Thr Asp Lys Arg
725                 730                 735                 740

aga tcc gca aga ata gac tcg tat ata gaa aga gac gtg act ccc gcc    2312
Arg Ser Ala Arg Ile Asp Ser Tyr Ile Glu Arg Asp Val Thr Pro Ala
                745                 750                 755

atc atg gaa gat gac gag ctg gct ctg gac ctg gaa gat ttg ctg agc    2360
Ile Met Glu Asp Asp Glu Leu Ala Leu Asp Leu Glu Asp Leu Leu Ser
                760                 765                 770

ttt tcc tac cag gtg gcc aag ggc atg gcg ttc ctc gcc tcc aag aac    2408
Phe Ser Tyr Gln Val Ala Lys Gly Met Ala Phe Leu Ala Ser Lys Asn
            775                 780                 785

tgt att cac aga gat ttg gca gcc agg aat atc ctc ctc act cac ggg    2456
Cys Ile His Arg Asp Leu Ala Ala Arg Asn Ile Leu Leu Thr His Gly
    790                 795                 800
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cgg atc aca aag att tgc gat ttc ggc cta gcc aga gac atc agg aat    2504
Arg Ile Thr Lys Ile Cys Asp Phe Gly Leu Ala Arg Asp Ile Arg Asn
805              810              815                  820

gat tcg aat tac gtg gta aaa gga aat gca cgg ctg ccc gtg aag tgg    2552
Asp Ser Asn Tyr Val Val Lys Gly Asn Ala Arg Leu Pro Val Lys Trp
                825              830                  835

atg gca ccg gag agc att ttc aac tgc gtg tac aca ttt gaa agt gac    2600
Met Ala Pro Glu Ser Ile Phe Asn Cys Val Tyr Thr Phe Glu Ser Asp
            840              845                  850

gtc tgg tcc tat ggg att ttc ctc tgg gag cta ttc tct cta gga agc    2648
Val Trp Ser Tyr Gly Ile Phe Leu Trp Glu Leu Phe Ser Leu Gly Ser
            855              860                  865

agc ccc tac cca ggg atg ccg gtc gat tcc aag ttt tac aag atg atc    2696
Ser Pro Tyr Pro Gly Met Pro Val Asp Ser Lys Phe Tyr Lys Met Ile
        870              875                  880

aag gaa ggt ttc cga atg ctc agc cct gag cac gcg cct gcc gca atg    2744
Lys Glu Gly Phe Arg Met Leu Ser Pro Glu His Ala Pro Ala Ala Met
885              890              895                  900

tat gaa gtt atg aag act tgc tgg gat gct gat ccc ctg aaa agg cca    2792
Tyr Glu Val Met Lys Thr Cys Trp Asp Ala Asp Pro Leu Lys Arg Pro
            905              910                  915

aca ttc aag cag gtt gtt cag ctc att gag aag cag atc tca gac agc    2840
Thr Phe Lys Gln Val Val Gln Leu Ile Glu Lys Gln Ile Ser Asp Ser
            920              925                  930

agc aaa cat att tac tcc aac tta gca aac tgt aac ccc aac cca gag    2888
Ser Lys His Ile Tyr Ser Asn Leu Ala Asn Cys Asn Pro Asn Pro Glu
        935              940                  945

aac ccc gtg gtg gtg gac cat tct gtg agg gtc aat tcc gtc ggc agc    2936
Asn Pro Val Val Val Asp His Ser Val Arg Val Asn Ser Val Gly Ser
        950              955                  960

agc acc tct tcc aca cag cct ctc ctc gtg cat gag gac gcc tga        2981
Ser Thr Ser Ser Thr Gln Pro Leu Leu Val His Glu Asp Ala
965              970              975
```

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gtagaaacgg agcccgatgg gcattgctgt ggtctccaac cccattctcc tggcttctat    3041

gatggttatt ttgttttcct ttgacttgca tcctactcca gggtagcggg atccccgccc    3101

cacccccaac cccactgtga ttctgccttt tatgagcaca ctttagtggc tgatggcctt    3161

tccttttcgc catcagccac catcccacca agaaggtccg aacggtatgt atatattttc    3221

ccattagcaa agtagcccct actgtaaacg gaaggcctca tgctttagag gaggaagggt    3281

agggtgcaac ggggatgcct ggagttcttc acagtgctcc tccgagtgtg tttgaaaagt    3341

atggccagta gttcatttga agagtttaga agtagtcccg ttttggccca gagagccttc    3401

cataatgacg ggcagatgta tgtagcaaga ctagaaagga aacccaagcc ctgtgtgtgg    3461

aaagtagacc attattagaa cagaggacac atgagaacat ctaggcctaa gaagtctggt    3521

catgctgaga acgagaccta ggctgagacg gcgcaagccc tggaagcgtg gacatagatg    3581
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ctctgttctg gggctgcgcg ggcttttgcg caagcttttg tacaactgac ctggttttta   3641
aatagtctgc tgttggggag tagaattgga gacaaggcct cctccctagc cagcgtttgt   3701
atatactcac tgtacgttgt atgcgttcat actttggagc gggggatccc cccacaagct   3761
ttagtttctg tgtacaaccc tgggattagg tctgctgtgt gtaagaatag attta       3816
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<210> 6
<211> 978
<212> PRT
<213> Rattus norvegicus

<400> 6

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Met Arg Gly Ala Arg Gly Ala Trp Asp Leu Leu Cys Val Leu Leu Val
1               5                   10                  15

Leu Leu Arg Gly Gln Thr Gly Thr Ser Gln Pro Ser Ala Ser Pro Gly
            20                  25                  30

Glu Pro Ser Pro Pro Ser Ile Gln Pro Ala Gln Ser Glu Leu Ile Val
        35                  40                  45

Glu Ala Gly Asp Thr Ile Arg Leu Thr Cys Thr Asp Pro Ala Phe Val
    50                  55                  60

Lys Trp Thr Phe Glu Ile Leu Asp Val Arg Ile Glu Asn Lys Gln Ser
65                  70                  75                  80

Glu Trp Ile Arg Glu Lys Ala Glu Ala Thr His Thr Gly Lys Tyr Thr
                85                  90                  95

Cys Val Ser Gly Ser Gly Leu Arg Ser Ser Ile Tyr Val Phe Val Arg
            100                 105                 110

Asp Pro Ala Val Leu Phe Leu Val Gly Leu Pro Leu Phe Gly Lys Glu
        115                 120                 125

Asp Asn Asp Ala Leu Val Arg Cys Pro Leu Thr Asp Pro Gln Val Ser
    130                 135                 140

Asn Tyr Ser Leu Ile Glu Cys Asp Gly Lys Ser Leu Pro Thr Asp Leu
145                 150                 155                 160

Lys Phe Val Pro Asn Pro Lys Ala Gly Ile Thr Ile Lys Asn Val Lys
                165                 170                 175

Arg Ala Tyr His Arg Leu Cys Ile Arg Cys Ala Ala Gln Arg Glu Gly
            180                 185                 190
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Lys Trp Met Arg Ser Asp Lys Phe Thr Leu Lys Val Arg Ala Ala Ile
        195             200             205

Lys Ala Ile Pro Val Val Ser Val Pro Glu Thr Ser His Leu Leu Lys
    210             215             220

Glu Gly Asp Thr Phe Thr Val Ile Cys Thr Ile Lys Asp Val Ser Thr
225             230             235             240

Ser Val Asp Ser Met Trp Ile Lys Leu Asn Pro Gln Pro Gln Ser Lys
            245             250             255

Ala Gln Val Lys Arg Asn Ser Trp His Gln Gly Asp Phe Asn Tyr Glu
            260             265             270

Arg Gln Glu Thr Leu Thr Ile Ser Ser Ala Arg Val Asn Asp Ser Gly
        275             280             285

Val Phe Met Cys Tyr Ala Asn Asn Thr Phe Gly Ser Ala Asn Val Thr
    290             295             300

Thr Thr Leu Lys Val Val Glu Lys Gly Phe Ile Asn Ile Phe Pro Val
305             310             315             320

Lys Asn Thr Thr Val Phe Val Thr Asp Gly Glu Asn Val Asp Leu Val
            325             330             335

Val Glu Phe Glu Ala Tyr Pro Lys Pro Glu His Gln Gln Trp Ile Tyr
        340             345             350

Met Asn Arg Thr Pro Thr Asn Arg Gly Glu Asp Tyr Val Lys Ser Asp
        355             360             365

Asn Gln Ser Asn Ile Arg Tyr Val Asn Glu Leu Arg Leu Thr Arg Leu
    370             375             380

Lys Gly Thr Glu Gly Gly Thr Tyr Thr Phe Leu Val Ser Asn Ser Asp
385             390             395             400

Val Ser Ala Ser Val Thr Phe Asp Val Tyr Val Asn Thr Lys Pro Glu
            405             410             415

Ile Leu Thr Tyr Asp Arg Leu Met Asn Gly Arg Leu Gln Cys Val Ala
        420             425             430

Ala Gly Phe Pro Glu Pro Thr Ile Asp Trp Tyr Phe Cys Thr Gly Ala
        435             440             445
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Glu Gln Arg Cys Thr Val Pro Val Pro Pro Val Asp Val Gln Ile Gln
    450             455         460

Asn Ala Ser Val Ser Pro Phe Gly Lys Leu Val Val Gln Ser Ser Ile
465             470         475             480

Asp Ser Ser Val Phe Arg His Asn Gly Thr Val Glu Cys Lys Ala Ser
            485             490             495

Asn Ala Val Gly Lys Ser Ser Ala Phe Phe Asn Phe Ala Phe Lys Gly
            500             505         510

Asn Ser Lys Glu Gln Ile Gln Pro His Thr Leu Phe Thr Pro Leu Leu
        515             520             525

Ile Gly Phe Val Val Thr Ala Gly Leu Met Gly Ile Ile Val Met Val
    530             535             540

Leu Ala Tyr Lys Tyr Leu Gln Lys Pro Met Tyr Glu Val Gln Trp Lys
545             550             555             560

Val Val Glu Glu Ile Asn Gly Asn Asn Tyr Val Tyr Ile Asp Pro Thr
            565                 570             575

Gln Leu Pro Tyr Asp His Lys Trp Glu Phe Pro Arg Asn Arg Leu Ser
        580             585             590

Phe Gly Lys Thr Leu Gly Ala Gly Ala Phe Gly Lys Val Val Glu Ala
        595             600             605

Thr Ala Tyr Gly Leu Ile Lys Ser Asp Ala Ala Met Thr Val Ala Val
    610             615             620

Lys Met Leu Lys Pro Ser Ala His Leu Thr Glu Arg Glu Ala Leu Met
625             630             635             640

Ser Glu Leu Lys Val Leu Ser Tyr Leu Gly Asn His Met Asn Ile Val
            645             650             655

Asn Leu Leu Gly Ala Cys Thr Val Gly Gly Pro Thr Leu Val Ile Thr
        660             665             670

Glu Tyr Cys Cys Tyr Gly Asp Leu Leu Asn Phe Leu Arg Arg Lys Arg
        675             680             685

Asp Ser Phe Ile Phe Ser Lys Gln Glu Glu Gln Ala Asp Ala Ala Leu
    690             695             700
```

Tyr Lys Asn Leu Leu His Ser Lys Glu Ser Ser Cys Asp Ser Ser Asn
705   710   715   720

Glu Tyr Met Asp Met Lys Pro Gly Val Ser Tyr Val Val Pro Thr Lys
           725   730   735

Thr Asp Lys Arg Arg Ser Ala Arg Ile Asp Ser Tyr Ile Glu Arg Asp
           740   745   750

Val Thr Pro Ala Ile Met Glu Asp Asp Glu Leu Ala Leu Asp Leu Glu
           755   760   765

Asp Leu Leu Ser Phe Ser Tyr Gln Val Ala Lys Gly Met Ala Phe Leu
    770   775   780

Ala Ser Lys Asn Cys Ile His Arg Asp Leu Ala Ala Arg Asn Ile Leu
785   790   795   800

Leu Thr His Gly Arg Ile Thr Lys Ile Cys Asp Phe Gly Leu Ala Arg
           805   810   815

Asp Ile Arg Asn Asp Ser Asn Tyr Val Val Lys Gly Asn Ala Arg Leu
           820   825   830

Pro Val Lys Trp Met Ala Pro Glu Ser Ile Phe Asn Cys Val Tyr Thr
           835   840   845

Phe Glu Ser Asp Val Trp Ser Tyr Gly Ile Phe Leu Trp Glu Leu Phe
     850   855   860

Ser Leu Gly Ser Ser Pro Tyr Pro Gly Met Pro Val Asp Ser Lys Phe
865   870   875   880

Tyr Lys Met Ile Lys Glu Gly Phe Arg Met Leu Ser Pro Glu His Ala
           885   890   895

Pro Ala Ala Met Tyr Glu Val Met Lys Thr Cys Trp Asp Ala Asp Pro
           900   905   910

Leu Lys Arg Pro Thr Phe Lys Gln Val Val Gln Leu Ile Glu Lys Gln
           915   920   925

Ile Ser Asp Ser Ser Lys His Ile Tyr Ser Asn Leu Ala Asn Cys Asn
           930   935   940

Pro Asn Pro Glu Asn Pro Val Val Val Asp His Ser Val Arg Val Asn
945   950   955   960

Ser Val Gly Ser Ser Thr Ser Ser Thr Gln Pro Leu Leu Val His Glu
                965   970   975

Asp Ala